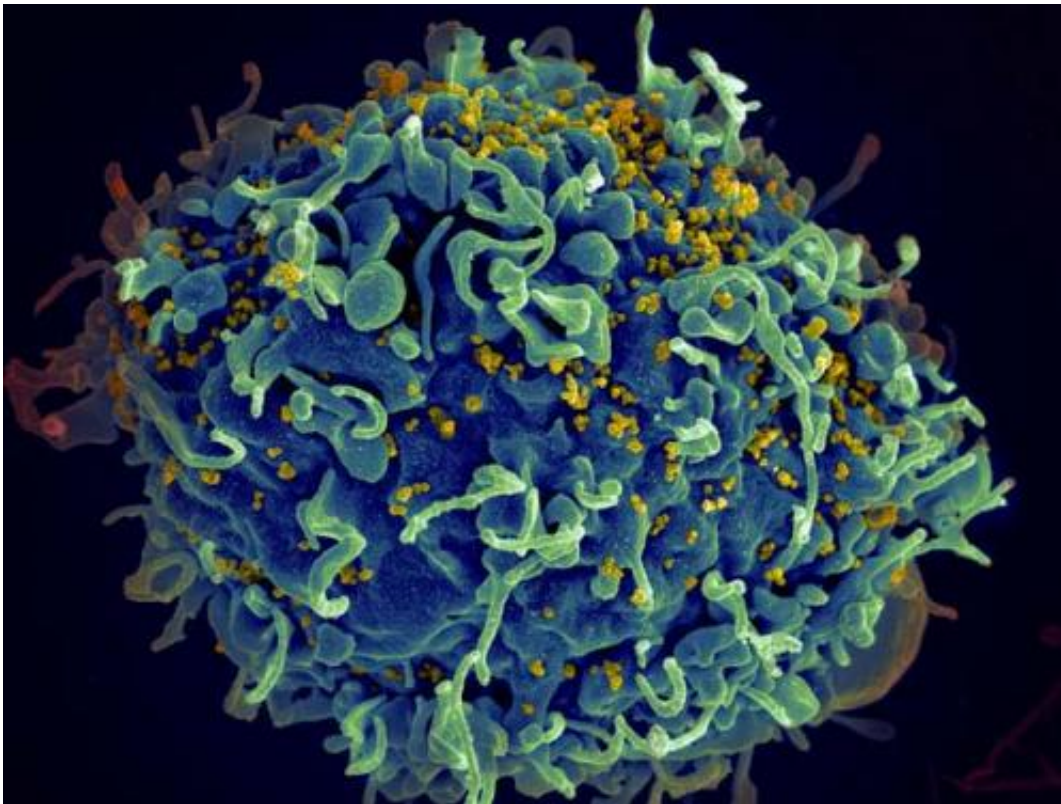


## As circumcision wounds heal, HIV-positive men may spread virus to female partners

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HIV, the AIDS virus (yellow), infecting a human immune cell. Credit: Seth Pincus, Elizabeth Fischer and Austin Athman, National Institute of Allergy and Infectious Diseases, National Institutes of Health.

In the midst of an international campaign to slow the spread of HIV in sub-Saharan Africa, the World Health Organization recommends male circumcision (the surgical removal of foreskin from the penis) which

reduces HIV acquisition by 50-60%. However, scientists report that a new study of HIV-infected men in Uganda has identified a temporary, but potentially troublesome unintended consequence of the procedure: a possible increased risk of infecting female sexual partners while circumcision wounds heal.

In a study by researchers from the Johns Hopkins University School of Medicine, the Johns Hopkins University Bloomberg School of Public Health and Rakai Health Sciences Program, 223 HIV-positive Ugandan [men](#) were medically circumcised. Health workers poured 5 milliliters (about a teaspoon) of saline solution over the circumcision site near the neck of the [penis](#) and collected the solution for testing just before surgery, during the operation, and once a week for 12 weeks.

Data showed that among the 183 men not taking anti-retroviral drugs, less than 10 percent were shedding HIV before circumcision, but nearly 30 percent were shedding the [virus](#) two weeks after surgery. The percentages dropped sharply as the men's wounds healed, to less than three percent at six weeks and less than two percent at 12 weeks.

Circumcision reduced the number of HIV-positive men who were shedding the virus more than five-fold over the long term, but it had the opposite effect in the weeks right after the surgery.

"There is a window of a few weeks after circumcision when the risk that an HIV-infected man could transmit the virus to a female partner actually increases," says Aaron A.R. Tobian, MD, PhD, an associate professor of pathology at the Johns Hopkins University School of Medicine and the study's first author. "During that time, more HIV-infected men are shedding the virus, and on average they are shedding greater amounts of it, than before circumcision," he adds.

"We don't know for certain if this increase in the amount of virus the

men are shedding actually leads to more cases of HIV transmission to their female partners," says co-author Ronald Gray, MD, MSc, a professor of epidemiology at the Bloomberg School. "But we do know that HIV-infected men who engage in sex before their circumcision wound heals have higher rates of transmission to their partners. Also, the higher an HIV-infected person's viral load, the greater the risk of transmitting the virus to a partner. So it is plausible that the risk goes up during that time."

A report on the study, published April 28 in *PLOS Medicine*, cites two factors - the passage of time, and treatment with anti-retroviral drugs - that dramatically reduced the virus' prevalence in HIV-positive, recently circumcised men.

Case by case, the likelihood of HIV transmission from a newly-circumcised man to his female partner is less than one-tenth of one percent, the researchers estimated. But with the World Health Organization seeking to circumcise nearly 29 million men, the study projects that this small increase could add up to 17,000 new infections among female partners of newly circumcised HIV-infected men.

Medical circumcision has been shown to cut the odds of contracting HIV by 50-60% in adult men; greatly reduce cases of genital herpes and human papillomavirus; and reduce the prevalence of some sexually transmitted infections in female partners. The World Health Organization has set a goal of circumcising about four out of five men aged 15 to 49 in southern and eastern Africa. Adolescent and adult circumcision programs are ongoing, and include HIV testing and counseling. Studies show about six percent of the men seeking circumcision are HIV-positive.

"All [male circumcision](#) programs are counseling men to abstain from sex while their wounds are healing," says co-author Dr. Godfrey Kigozi at

the Rakai Health Sciences Program. "But several programs have reported that greater than 30% of the men have sex with female partners during the healing period."

"Although we're counseling men not to have sexual intercourse while their wounds are healing, we know that they are," Tobian says, "and it's important to take steps to reduce the risk that they'll transmit the virus to their [female partners](#) during this time."

The solution, he says, may lie in another one of the study's findings. "If the men are on anti-retroviral drugs, this reduces the risk of their shedding the virus by about 90 percent," Tobian says. "Thus, it is logical for HIV-infected men to begin anti-retroviral therapy at the time of [circumcision](#). However, we will need further studies to find out exactly which drugs and for how long."

**More information:** Tobian AAR, Kigozi G, Manucci J, Grabowski MK, Serwadda D, et al. (2015) HIV Shedding from Male Circumcision Wounds in HIV-Infected Men: A Prospective Cohort Study. *PLoS Med* 12(4): e1001820. [DOI: 10.1371/journal.pmed.1001820](https://doi.org/10.1371/journal.pmed.1001820)

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